REMARKS

Reconsideration and allowance of the above-identified application are respectfully requested.

Claims 1-228 are currently pending, wherein claims 1, 13, 26, 39, 51, 64, 77, 89, 102, 115, 127, 140, 153, 165, 178, 191203 and 216 are independent.

Applicants note with appreciation the allowance by the Patent Office of claims 13, 15-17, 19-21, 23-26, 28-30, 32-34, 36-38, 51, 53-55, 57-59, 61-64, 66-68, 70-72, 74-76, 89, 91-93, 95-97, 99-102, 104-106, 108-110, 112-114, 127, 129-131, 133-135, 137-140, 142-144, 146-148, 150-152, 165, 167-169, 171-173, 175-178, 180-182, 184-186, 188-190, 203, 205-207, 209-211 and 213-215.

Applicants respectfully note that, in the present Office Action, the Patent Office has not proffered any objection or rejection of independent claim 216 and corresponding dependent claims 218, 219, 220, 222, 223, 224, 226, 227 and 228. Consequently, Applicants respectfully request that, in the next communication, the Patent Office indicate that the aforementioned claims are allowed.

Applicants also note with appreciation the acceptance by the Patent Office of the drawings filed on February 5, 2002.

Applicants further note with appreciation the acknowledgment by the Patent Office of the Information Disclosure Statement previously submitted to the Patent Office.

Applicants would like to thank Examiner Sudhanshu Pathak and Supervisory Examiner Stephen Chin for the personal interview conducted on July 7, 2005. In compliance with M.P.E.P. § 713.04, the substance of that interview is incorporated in the foregoing

amendments to the claims and in the following remarks.

In the second section of the Office Action, the abstract of the disclosure is objected to, because the abstract exceeds 150 words. Applicants hereby amend the abstract to reduce the number of words contained in the abstract to no more than 150. Accordingly, reconsideration and withdrawal of this ground of objection are respectfully requested.

In the third section of the Office Action, the disclosure is objected to, because the Patent Office asserts that Equations 2 and 3 on page 15 of the present application are allegedly identical. During the interview, it was pointed out to the Patent Office that, with respect to Equation 2, "the index arithmetic is performed modulo N, i.e., $y_{p-M-i} = y_{(p-M-i) \bmod N}$ and $y_{p+M+i} = y_{(p+M+i) \bmod N}$." [present application, paragraph 0047, page 15] However, it was also pointed to the Patent Office that, with respect to Equation 3, "the index arithmetic is performed modulo 2N, i.e., $y_{p-M-i} = y_{(p-M-i) \bmod 2N}$ and $y_{p+M+i} = y_{(p+M+i) \bmod 2N}$." [present application, paragraph 0048, page 16] Accordingly, based on the aforementioned disclosure of the present application, the Patent Office agreed to withdraw this objection.

In the fifth section of the Office Action, claims 2, 6, 10, 14, 18, 22, 27, 31, 35, 40, 44, 48, 52, 56, 60, 65, 69, 73, 78, 82, 86, 90, 94, 98, 103, 107, 111, 116, 120, 124, 128, 132, 136, 141, 145, 149, 154, 158, 162, 166, 170, 174, 179, 183, 187, 192, 196, 200, 204, 208, 212, 217, 221 and 225 are rejected under 35 U.S.C. § 112, first paragraph, for allegedly failing to comply with the enablement requirement. No agreement was reached during the interview. These rejections are respectfully traversed.

According to M.P.E.P. § 2164.01,

> [t]he standard for determining whether the specification meets the enablement requirement was cast in the Supreme Court decision of *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916) which postured the question: is the

> experimentation needed to practice the invention undue or unreasonable? That standard is still the one to be applied . . . . Accordingly, even though the statute does not use the term "undue experimentation," it has been interpreted to require that the claimed invention be enabled so that any person skilled in the art can make and use the invention without undue experimentation. [M.P.E.P. § 2164.01]

In addition, it is a fundamental principle that "[a] patent need not teach, and preferably omits, what is well known in the art." [M.P.E.P. § 2164.01 (citations omitted)]

Claims 2, 14, 27, 40, 52, 65, 78, 90, 103, 116, 128, 141, 154, 166, 179, 192, 204 and 217 recite the feature that the signal quality values are computed as follows:

$$SQ_j = \left(\frac{|y_{peak}|}{\left| \sum_{i=0}^{N} y_i - 2y_{peak} \right|} \right)$$

where N is a predetermined number of samples to be extracted for each spreading codeword, y_k is a value corresponding to the k^{th} sample for spreading codeword symbol y, y_{peak} is the maximum of all values of y_k for symbol y, and SQ_j = the signal quality measurement for the j^{th} antenna. The Patent Office posits that "it is not clear as to how the 'denominator expression' of Equation 1 is the average sample value." [Office Action, page 3]

It is respectfully submitted that the Patent Office's statement does not comport with the proper analysis of the enablement requirement under 35 U.S.C. § 112, first paragraph. Rather, a proper determination requires an analysis of many undue experimentation factors, such as those listed in M.P.E.P. § 2164.01(a). Accordingly,

> [i]t is improper to conclude that a disclosure is not enabling based on an analysis of only one of the [factors listed in M.P.E.P. § 2164.01(a)] while ignoring one or more of the others. The examiner's analysis *must* consider *all* the evidence related to each of these factors, and any conclusion of

nonenablement must be based on the evidence *as a whole*. [M.P.E.P. § 2164.01(a) (emphasis added)]

According to the present application,

> A signal quality ("SQ") measurement may be computed using Equation 1 below:
>
> $$SQ_j = \left(\frac{|y_{peak}|}{\left| \sum_{i=0}^{N} y_i - 2y_{peak} \right|} \right)$$
>
> where N = the number of samples and SQ_j = the signal quality measurement for the j^{th} antenna. Equation 1 defines a measurement of a peak-to-average ratio within a given data symbol, rather than a signal-to-noise ratio. Hence, the peak-to-average ratio, as formulated above, is much more effective at dealing with the intersymbol interference that is a likely result of a multipath signal environment. The operation of Equation 1 above is carried out for each incoming spreading codeword in a prescribed period of time during the preamble of each data packet for all antennas in the antenna diversity array. Then, an antenna is selected based on either SQ, SNR, or both SQ and SNR. [present application, paragraph 0032, page 9]

Based on the foregoing disclosure, it is respectfully submitted that no undue or unreasonable experimentation would be needed to enable a person skilled in the art to make and use the invention as recited in claims 2, 14, 27, 40, 52, 65, 78, 90, 103, 116, 128, 141, 154, 166, 179, 192, 204 and 217.

Claims 6, 10, 18, 22, 31, 35, 44, 48, 56, 60, 69, 73, 82, 86, 94, 98, 107, 111, 120, 124, 132, 136, 145, 149, 158, 162, 170, 174, 183, 187, 196, 200, 208, 212, 221 and 225 recite the feature that the signal quality values are computed as follows:

$$SQ = \left(\frac{|y_p|}{\sum_{i=1}^{L} \left(|y_{p-M-i}| + |y_{p+M+i}| \right)} \right)$$

where y_k is a value corresponding to the k^{th} sample for spreading codeword symbol y, y_p is the maximum of all values of y_i for symbol y, L and M are arbitrary whole numbers, 2N is the number of samples, and for any index k, $y_k = y_{k \bmod 2N}$, and SQ = the signal quality measurement. The Patent Office posits that "it is not clear as to how the 'denominator expression' of Equations 2/3 is the average sample value." [Office Action, page 4]

Once again, it is respectfully submitted that the Patent Office's statement does not comport with the proper analysis of the enablement requirement under 35 U.S.C. § 112, first paragraph. According to the present application,

> [t]he equation used for calculating signal quality, Equation 1 above, may be specified more exactly to correspond to the non-oversampled case and the oversampled case, respectively. Supposing that an N-chip spreading code is used and a non-oversampled system is being employed, there will be one sample for each chip, thus N samples for each symbol, which may be represented as $(y_0, y_1, \ldots, y_{N-1})$. Let p denote the index of the sample corresponding to the value having the peak magnitude; hence, $|y_p| = \max_i |y_i|$. Then, for any arbitrary values of L and M, the signal quality measurement equation may be expressed as follows (Equation 2):

$$SQ = \left(\frac{|y_p|}{\sum_{i=1}^{L} \left(|y_{p-M-i}| + |y_{p+M+i}| \right)} \right)$$

> where the index arithmetic is performed modulo N, i.e., $y_{p-M-i} = y_{(p-M-i) \bmod N}$ and $y_{p+M+i} = y_{(p+M+i) \bmod N}$.
>
> The equation used for calculating signal quality, Equation 1 above, may be specified more exactly to correspond to the non-oversampled case and the oversampled case, respectively. Supposing that an N-chip spreading code

is used and a non-oversampled system is being employed, there will be one sample for each chip, thus N samples for each symbol, which may be represented as (y_0, y_1, . . . , y_{N-1}). Let p denote the index of the sample corresponding to the value having the peak magnitude; hence, $|y_p| = \max_i |y_i|$. Then, for any arbitrary values of L and M, the signal quality measurement equation may be expressed as follows (Equation 2):

$$SQ = \left(\frac{|y_p|}{\sum_{i=1}^{L} \left(|y_{p-M-i}| + |y_{p+M+i}| \right)} \right)$$

where the index arithmetic is performed modulo N, i.e., $y_{p-M-i} = y_{(p-M-i) \bmod N}$ and $y_{p+M+i} = y_{(p+M+i) \bmod N}$. [present application, paragraphs 0047-0048, page 15 – page 16]

Based on the foregoing disclosure, it is respectfully submitted that no undue or unreasonable experimentation would be needed to enable a person skilled in the art to make and use the invention as recited in claims 6, 10, 18, 22, 31, 35, 44, 48, 56, 60, 69, 73, 82, 86, 94, 98, 107, 111, 120, 124, 132, 136, 145, 149, 158, 162, 170, 174, 183, 187, 196, 200, 208, 212, 221 and 225.

For at least the foregoing reasons, it is respectfully submitted that claims 2, 6, 10, 14, 18, 22, 27, 31, 35, 40, 44, 48, 52, 56, 60, 65, 69, 73, 78, 82, 86, 90, 94, 98, 103, 107, 111, 116, 120, 124, 128, 132, 136, 141, 145, 149, 154, 158, 162, 166, 170, 174, 179, 183, 187, 192, 196, 200, 204, 208, 212, 217, 221 and 225 fully and completely comply with the enablement requirement of 35 U.S.C. § 112, first paragraph. Accordingly, reconsideration and withdrawal of these grounds of rejection are respectfully requested.

In the seventh section of the Office Action, claims 5, 8-9, 43, 46-47, 81, 84-85, 119, 122-123, 157, 160-161, 195, 198 and 199 are rejected under 35 U.S.C. § 112, second

paragraph, because the Patent Office alleges that the feature of "**a** predetermined number of sample values for each spreading codeword," allegedly lacks antecedent basis. During the interview, it was pointed out to the Patent Office that the phrase "predetermined number of sample values" is introduced by an "a," thereby providing proper antecedent basis for the feature in the aforementioned claims. Accordingly, the Patent Office agreed to withdraw this rejection.

In the ninth section of the Office Action, claims 1, 12, 39, 50, 77, 88, 115, 126, 153, 164, 191 and 202 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the Applicant Admitted Prior Art (hereinafter, "AAPA"), in view of Liu et al. ("Advanced Low-Complexity HIPERLAN Receiver Using Combined Antenna Switching Diversity and Simple Equaliser," hereinafter "Liu"), and further in view of Kanoksri Sarinnapakorn ("IEEE 802.11b 'High Rate' Wireless Local Area Networks," hereinafter "Sarinnapakorn). No agreement was reached during the interview. These rejections are respectfully traversed.

Exemplary embodiments of the present invention are directed to a communication system for communicating data packets. The system includes a receiver subsystem. The receiver subsystem includes a first antenna, a second antenna, a direct sequence spread-spectrum modulator, and a signal quality measurement device. The direct sequence spread-spectrum modulator is configured to correlate a spreading code with a preamble of each data packet to produce a spreading codeword. The signal quality measurement device is configured to measure signal quality values corresponding to each of the first and second antennas for each data packet after correlation with the spreading code and to select an antenna on the basis of the measured signal quality values. According to exemplary embodiments, the signal quality measurement device is configured to measure signal quality

values *other than* signal-to-noise ration (SNR) by computing peak-to-average ratio values by dividing a peak sample value by an average sample value. The average sample value can be determined by averaging all of the predetermined number of sample values for each incoming spreading codeword. The peak sample value can be determined by selecting the maximum of all of the predetermined number of sample values for each incoming spreading codeword. [*see* present application, paragraph 0009, pages 3-4]

With regard to the AAPA, as illustrated in Figure 1, a communication system 100 uses antenna diversity, in which at least two separate antennas 105, 110 are used as inputs to a single receiver system 115. For each data packet, the receiver 115 is designed to select which antenna input is providing the best signal reception for each data packet. [*see* present application, paragraph 0002, page 1] However, contrary to the assertions of the Patent Office, and in contrast to exemplary embodiments of the present, in many communication systems that use antenna diversity to counteract the effects of noise and interference, *SNR* is the quantity that is typically measured and used as the determinant in the selection of which antenna should be employed. [*see* present application, paragraph 0005, page 2] For example, Figure 3 illustrates a block diagram for a conventional communication system 300 designed to select an antenna from two or more antennas in an antenna diversity scheme by using the *SNR* as the determinant. [see present application, paragraph 0006, page 2]

As acknowledged by the Patent Office, the AAPA does not disclose or suggest the feature of *a direct sequence spread-spectrum demodulator* in communication with first and second antennas, *in which the demodulator is configured to correlate a spreading code with a preamble of each data packet to produce a spreading codeword*, as recited in, for example, independent claim 1 of the present application. In addition, it is respectfully submitted that

the AAPA does not disclose or even suggest the feature of *a signal quality measurement device responsive to the direct sequence spread-spectrum demodulator*, in which the device is configured to measure signal quality values corresponding to each of the first and second antennas for each data packet ***after*** *correlation with the spreading code* and to select one of the first and second antennas on the basis of the measured signal quality values, as recited in, for example, independent claim 1 of the present application.

As understood by Applicants, Liu is directed to a receiver that uses combined antenna switching diversity and a simple baseband equalizer. [*see* Liu, Abstract] The receiver utilizes the HIPERLAN synchronization sequence. [*see* Liu, Abstract] The receiver includes a preamble processing unit that is used to measure the signal quality at three antennas and select one of them. [*see* Liu, page 2038, left column and Figure 2] According to Liu, "a channel impulse response is generated for each antenna by correlating a segment of the received samples [from] that antenna with a corresponding 31 [synchronization] bits (*matched filter*)." [Liu, page 2040, left column (emphasis added)] From the three channel estimates (i.e., each corresponding to one of the three antennas), the best antenna is determined. More particularly, Liu discloses that

> [t]he optimum criterion for antenna selection depends on the equaliser. For a K-tap simplified LL-equaliser, a reasonable criterion is the maximum of the sum of the worst-case eye-opening of K consecutive channel taps. As this criterion is too complex for the antenna selection . . . , we prefer to use a rather simple measure, namely, the sum of the power in N consecutive channel taps (N > K). N shall be chosen such to cover the maximal relevant channel length. [Liu, page 2040, left column]

Accordingly, it is respectfully submitted that *nowhere* does Liu disclose or suggest the features of a *direct sequence spread-spectrum demodulator* in communication with first and

second antennas, *in which the demodulator is configured to correlate a spreading code with a preamble of each data packet to produce a spreading codeword*, and *a signal quality measurement device responsive to the direct sequence spread-spectrum demodulator*, in which the device is configured to measure signal quality values corresponding to each of the first and second antennas for each data packet ***after*** *correlation with the spreading code* and to select one of the first and second antennas on the basis of the measured signal quality values, as recited in, for example, independent claim 1 of the present application. Rather, Liu discloses that the preamble processing unit uses a *matched filter* to determine the channel impulse response associated with each antenna, and then selects the best antenna from the determined channel impulse responses. It is also respectfully noted that the Patent Office acknowledges that Liu does not disclose the feature of a direct sequence spread-spectrum demodulator. [*see* Office Action, page 6] Consequently, Liu does not address the above-identified deficiencies of the AAPA.

As understood by Applicants, Sarinnapakorn is directed to the IEEE 802.11b wireless local area network (WLAN) standard. Sarinnapakorn provides an overview and summary of the standard, including descriptions of, for example, the operation modes, the physical layer, the medium access control (MAC) sublayer, as well as other aspects of the 802.11b standard. With regard to the physical layer of 802.11b, Sarinnapakorn merely discloses that the standard "can support higher data rates of 5.5 and 11 Mbps by using Complementary Code Keying (CCK) with Quadrature Phase Shift Keying (QPSK) modulation with Direct-Sequence Spread-Spectrum (DSSS) technology." [Sarinnapakorn, page 2, "IEEE 802.11b Physical Layer"] According to Sarinnapakorn, "IEEE 802.11 uses either a FHSS (frequency-hopping spread sprectrum) or DSSS technology." [Sarinnapakorn, page 2, "IEEE 802.11b

Physical Layer"]

It is respectfully submitted that *nowhere* does Sarinnapakorn disclose or even suggest the features of a direct sequence spread-spectrum demodulator in communication with first and second antennas, *in which the demodulator is configured to correlate a spreading code with a preamble of each data packet to produce a spreading codeword*, and *a signal quality measurement device responsive to the direct sequence spread-spectrum demodulator*, in which the device is configured to measure signal quality values corresponding to each of the first and second antennas for each data packet ***after*** *correlation with the spreading code* and to select one of the first and second antennas on the basis of the measured signal quality values, as recited in, for example, independent claim 1 of the present application. Consequently, Liu does not address the above-identified deficiencies of the AAPA.

For at least the foregoing reasons, it is respectfully submitted that the AAPA, Liu, and Sarinnapakorn, whether considered alone or in combination, do not disclose or suggest numerous features of the present invention, as recited in, for example, independent claim 1 of the present application. Accordingly, it is respectfully submitted that the combination of the AAPA, Liu and Sarinnapakorn does not render the subject matter of independent claim 1 obvious.

Additionally, "[t]o establish a prima facie case of obviousness . . . there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." [M.P.E.P. § 2142] "There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." [M.P.E.P. § 2143.01] It is respectfully

submitted the Patent Office has provided no reference, citation or other support, in the AAPA, Liu, Sarinnapakorn or otherwise, for the bald and unsupported assertion that the proposed combination of the AAPA and Lui

> would have been obvious to one of ordinary skill in the art at the time of the invention that Liu teaches a WLAN standard for communication of data packets comprising preamble bits which are correlated and then used to determine the signal quality of the received signals of the antennas and this can be implemented with the communication system and receiver as described in the AAPA so as to demodulate[] the received signals for each antenna before determining the signal quality of each received signal. [Office Action, page 6]

Furthermore, it is respectfully submitted the Patent Office has provided no reference, citation or other support, in the AAPA, Liu, Sarinnapakorn or otherwise, for the bald and unsupported assertion that the proposed combination of Sarinnapakorn with the AAPA and Lui

> would have been obvious to one of ordinary skill in the art at the time of the invention that Sarinnapakorn teaches DSSS technology in a WLAN communication system and this can be implemented in the communication system as describe[d] in the AAPA in view of Liu so as to provide increased data rate and increased reliability of communication in a noisy environment. [Office Action, page 6 – page 7]

Accordingly, it is respectfully submitted that the Patent Office has failed to establish a prima facie case of obviousness. If this rejection is repeated, the Patent Office is requested to specifically provide a reference, point out a citation, or provide credible support for such a bald and unfounded assertions.

Rather, it is respectfully submitted that the Patent Office is using impermissible hindsight in an attempt to render the claims of the present application obvious. According to M.P.E.P. § 2142, "[t]o reach a proper determination under 35 U.S.C. 103, . . . impermissible hindsight must be avoided and the legal conclusion [of obviousness] must be reached on the

basis of the facts gleaned from the prior art." Furthermore, according to M.P.E.P. § 2143.01, "[t]he mere fact that references can be . . . modified does not render the resultant combination obvious unless the prior art also suggests the desirability of [such modification]." [citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990)] It is respectfully submitted that it is clearly evident from the Patent Office's purported motivations to combine the references that the Patent Office is using the Applicants' own specification as a "road map" to reconstruct the Applicants' own invention. In addition, since the Patent Office has offered no proper support or motivation for combining the AAPA, Liu and Sarinnapakorn, it is respectfully submitted that the rejection based on obviousness is wholly, completely and utterly founded upon "knowledge gleaned only from applicant's disclosure." [*see* M.P.E.P. § 2145] Consequently, it is respectfully submitted that the rejection entails hindsight and is, therefore, improper.

Independent claims 39, 77, 115, 153 and 191 recite features similar to those recited in independent claim 1, and are, therefore, patentably distinguishable over the combination of the AAPA, Liu and Sarinnapakorn for at least those reasons stated above with regard to claim 1.

Dependent claims 12, 50, 88, 126, 164 and 202 variously depend from independent claims 1, 39, 77, 115, 153 and 191, and are, therefore, patentably distinguishable over the combination of the AAPA, Liu and Sarinnapakorn for least those reasons stated above with regard to claim 1, 39, 77, 115, 153 and 191.

For at least the foregoing reasons, it is respectfully submitted that the combination of the AAPA, Liu and Sarinnapakorn does not render the subject matter of claims 1, 12, 39, 50, 77, 88, 115, 126, 153, 164, 191 and 202 obvious. Accordingly, reconsideration and

withdrawal of these grounds of rejection are respectfully requested.

In the tenth section of the Office Action, claims 3, 4, 41, 42, 79, 80, 117, 118, 155, 156, 193 and 194 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the AAPA, in view of Liu, in further view of Sarinnapakorn, and further in view of Vijaya Chandran Ramasami ("Orthogonal Frequency Division Multiplexing," located at http://www.ittc.ku.edu/~rvc/documents/862/862_ofdmreport.pdf, hereinafter "Ramasami"). No agreement was reached during the interview. These rejections are respectfully traversed.

It is respectfully noted that the Patent Office has failed to provide a date for the Ramasami reference. It is further respectfully noted that the reference document itself does not specify any date. During the interview, it was point out to the Patent Office that the date of the Ramasami reference ("862_ofdmreport.pdf") is **May 31, 2002**, as evidenced by the attached printout of the index of the "/~rvc/documents/862" directory where the Ramasami reference was located by the Patent Office. As the present application was filed on **November 16, 2001**, the Ramasami is not prior art to the present application. Therefore, the rejection is improper.

Additionally, dependent claims 3, 4, 41, 42, 79, 80, 117, 118, 155, 156, 193 and 194 variously depend from independent claims 1, 39, 77, 115, 153 and 191, and are, therefore, patentably distinguishable over the prior art of record for at least those reasons stated above with regard to independent claims 1, 39, 77, 115, 153 and 191.

For at least the foregoing reasons, reconsideration and withdrawal of these grounds of rejection of claims 3, 4, 41, 42, 79, 80, 117, 118, 155, 156, 193 and 194 are respectfully requested.

In the eleventh section of the Office Action, claims 5, 8-9, 43, 46-47, 81, 84-85, 119,

122, 123, 157, 160, 161, 195, 198 and 199 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the AAPA, in view of Liu, in further view of Sarinnapakorn, and further in view of Grau et al. (U.S. Patent No. 5,077,753, hereinafter "Grau"). No agreement was reached during the interview. These rejections are respectfully traversed.

Dependent claims 5, 8-9, 43, 46-47, 81, 84-85, 119, 122, 123, 157, 160, 161, 195, 198 and 199 variously depend from independent claims 1, 39, 77, 115, 153 and 191, and are, therefore, patentably distinguishable over the combination of the AAPA, Liu, Sarinnapakorn and Grau for at least those reasons stated above with regard to independent claims 1, 39, 77, 115, 153 and 191. For example, it is respectfully submitted that Grau does not disclose or even suggest the feature of *a signal quality measurement device responsive to the direct sequence spread-spectrum demodulator*, in which the device is configured to measure signal quality values corresponding to each of the first and second antennas for each data packet ***after*** *correlation with the spreading code* and to select one of the first and second antennas on the basis of the measured signal quality values. Therefore, Grau does not address the above-identified deficiencies of the AAPA, Liu and Sarinnapakorn.

Additionally, it is respectfully submitted the Patent Office has provided no reference, citation or other support, in the AAPA, Liu, Sarinnapakorn, Grau or otherwise, for combining the references in the manner suggested by the Patent Office. Accordingly, it is respectfully submitted that the Patent Office has failed to establish a prima facie case of obviousness. Rather, it is respectfully submitted that the rejection based on obviousness is wholly and completely founded upon "knowledge gleaned only from applicant's disclosure." [*see* M.P.E.P. § 2145] Consequently, it is respectfully submitted that the rejection entails hindsight and is, therefore, improper.

Accordingly, reconsideration and withdrawal of these grounds of rejection of claims 5, 8-9, 43, 46-47, 81, 84-85, 119, 122, 123, 157, 160, 161, 195, 198 and 199 are respectfully requested.

In the twelfth section of the Office Action, claims 7, 11, 45, 49, 83, 87, 121, 125, 159, 163, 197 and 201 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the AAPA, in view of Liu, in further view of Sarinnapakorn and Grau, and further in view of Ramasami. No agreement was reached during the interview. These rejections are respectfully traversed.

It is respectfully noted that the Patent Office has failed to provide a date for the Ramasami reference. It is further respectfully noted that the reference document itself does not specify any date. During the interview, it was point out to the Patent Office that the date of the Ramasami reference ("862_ofdmreport.pdf") is **May 31, 2002**, as evidenced by the attached printout of the index of the "/~rvc/documents/862" directory where the Ramasami reference was located by the Patent Office. As the present application was filed on **November 16, 2001**, the Ramasami is not prior art to the present application. Therefore, the rejection is improper.

Additionally, dependent claims 7, 11, 45, 49, 83, 87, 121, 125, 159, 163, 197 and 201 variously depend from independent claims 1, 39, 77, 115, 153 and 191, and are, therefore, patentably distinguishable over the prior art of record for at least those reasons stated above with regard to independent claims 1, 39, 77, 115, 153 and 191.

For at least the foregoing reasons, reconsideration and withdrawal of these grounds of rejection of claims 7, 11, 45, 49, 83, 87, 121, 125, 159, 163, 197 and 201 are respectfully requested.

All of the objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance and a notice to that effect is earnestly solicited. Should the Examiner have any questions regarding this response or the application in general, the Examiner is urged to contact the Applicants' attorney, Andrew J. Bateman, by telephone at (202) 625-3547. All correspondence should continue to be directed to the address given below.

Respectfully submitted,

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